ACC.11
60th Annual Scientific Session & Expo

E1511
JACC April 5, 2011
Volume 57, Issue 15

VASCULAR DISEASE

DIABETIC STATUS DOES NOT AFFECT PLATELET FUNCTION ASSAYS IN PERIPHERAL ARTERIAL DISEASE PATIENTS ON HIGH DOSE ASPIRIN: AN ANALYSIS FROM THE EFFECT OF LIPID MODIFICATION ON PERIPHERAL ARTERIAL DISEASE AFTER ENDOVASCULAR INTERVENTION (ELIMIT) TRIAL

ACC Poster Contributions
Ernest N. Morial Convention Center, Hall F
Monday, April 04, 2011, 9:30 a.m.-10:45 a.m.

Session Title: Platelets and Thrombosis
Abstract Category: 8. Vascular Biology/Atherosclerosis/Thrombosis/Endothelium
Session-Poster Board Number: 1075-119

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Background: Diabetics (DM) with coronary artery disease have higher platelet aggregation and activation compared to non-diabetics (NDM) despite treatment with similar aspirin (ASA) doses. Peripheral arterial disease (PAD) patients are known to have activated platelets and high prevalence of DM. We evaluated if DM further impairs platelet functions (PF) in PAD patients on ASA.

Methods: PAD patients on 325 mg ASA and no other antiplatelet agent were included. Arachidonic acid (AA), collagen (CG), epinephrine (EP) and adenosine diphosphate (ADP) induced platelet aggregation was measured by optical aggregometry. EP and ADP closure time (CT) was measured with Platelet Function Analyzer (PFA)-100. Platelet activation was measured as mean fluorescence intensity (MFI) of CD62P. Shear induced platelet aggregation (SIPA) and shear induced P-selectin expression (SIPE) were measured.

Results: Despite higher glycosylated hemoglobin (HBA1c), there was no difference in platelet function assays in DM and NDM PAD patients (Table). HBA1c did not correlate with aggregometry slope (AA, r: -0.01, p=0.9; CG, r: -0.04, p=0.6; ADP, r: 0.07, p=0.4; EP, r: 0.05, p=0.5), PFA-100 CT (EP, r: 0.1, p=0.3; ADP, r: 0.07, p=0.9), SIPA % aggregation (r: 0.03; p=0.7) or MFI for CD62P (r: 0.05, p=0.6) and SIPE (r: 0.1, p=0.1).

Conclusions: DM does not significantly affect PF assays in PAD patients on ASA. Whether in vivo platelet activation in PAD overrides the effect of DM on PF or high dose ASA offsets the same requires further evaluation.

Platelet functions in diabetic and nondiabetic PAD patients

Assay (Median,25;75 IR)	Non-diabetics (n=42)	Diabetics (n=24)	p
HBA1c (%)	5.8 (5.7;6.2)	7.1 (6.5;8.3)	<0.001
Aggregometry (SI) AA (0.5mg/mL) CG (5 µg/mL) ADP (10 µm/L) EP (10 µm)	5.3 (0; 16.0) 20.0 (12.3;25.3) 33.5 (26.0;42.3) 13.5 (7.8;18.0)	6.5 (1.5;8.5) 25.0 (17.5;30.5) 33.0 (28;46.5) 13.5 (9.8;18.0)	0.9 0.8 0.6 0.9
PFA-100 (CT) ADP (10 µm/L) EP (10 µm)	86.0 (76.0;108.0) 289 (103;300)	95.0 (88.0;108.0) 300 (144;300)	0.2 0.5
SIPA (%) 5000 s-1 10000 s-1	41.7 (28.5;50.1) 83.2 (77.9;89.2)	48.4 (26.7;56.5) 85.5 (81.2;89.3)	0.5 0.4
P-selectin (MFI) CD62P SIPE 0 s-1 SIPE 5000 s-1 SIPE 10000 s-1	13.6 (11.1;19.3) 1.7 (1.0;3.4) 1.9 (1.4;4.7) 4.7 (3.7;6.8)	13.9 (10.3;19.1) 2.4 (1.3;2.7) 2.6 (1.7;4.2) 6.3 (3.1;7.9)	0.9 0.6 0.5 0.6